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## **ABSTRACT**

A method of supporting voice-band modem-to-modem calls in a wireless communication system is disclosed. In some embodiments, once a modem call is detected, the modem call is terminated. Data in the terminated modem call is then demodulated and relayed from one end of a wireless broadband channel to the other end of the wireless broadband channel. Transfer of the data to the second modem is completed when the other end of the wireless broadband channel places a modem call to the second modem. By sending data in high-rate modem calls via a wireless broadband channel rather than over multiple, dedicated wireless voice channels, resources of the wireless communication system are utilized more efficiently that can result in significant gains in system capacity.